What is claimed is:

1. A heat transferring device for thermally communicating heat energy being produced by a heat producing device of one of an apparatus or system to a heat sink, where the heat energy being generated by the heat producing device is un-useable heat energy with respect to the apparatus or system, said heat transferring device comprising:

a flexible thermally conductive member, a first end of which is thermally coupled to the heat producing device, and a second end of which is thermally coupled to the heat sink.

2. The heat transferring device of claim 1, wherein the flexible thermally conductive member is configured and arranged so that at least some of the heat energy being generated by the heat producing device is communicated to the heat sink.

3. The heat transferring device of claim 2 wherein the flexible thermally conductive member is configured and arranged so that a majority of the heat energy being generated is communicated to the heat sink.

4. The heat transferring device of claim 2 wherein the flexible thermally conductive member is configured and arranged so that one of at least 50% or 80% of the heat energy being generated is communicated to the heat sink.

5. The heat transferring device of claim 1, wherein the flexible thermally conductive member is configured and arranged so as to allow relative motion between the heat generating device and a portion of the heat sink.

6. The heat transferring device of claim 2, wherein the flexible thermally conductive member is configured and arranged so as to allow relative motion between the heat generating device and a portion of the heat sink.

7. The heat transferring device of either of claims 5 or 6, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

8. The heat transferring device of either of claims 5 or 6, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

9. The heat transferring device of any of claims 1, 2, 5 or 6, further comprising a plurality of flexible thermally conductive members, where the first end of each of the plurality of flexible thermally conductive members is thermally coupled to the heat producing device and where the second end of each of the plurality of flexible thermally conductive members is thermally coupled to the heat sink.

10. The heat transferring device of any of claims 1, 2, 5 or 6, wherein the flexible thermally conductive member is comprised of a plurality or more of flexible elements.

11. The heat transferring device of claim 9, wherein each of the plurality of flexible thermally conductive members is comprised of a plurality or more of flexible elements.

12. The heat transferring device of any of claims 1, 2, 5 or 6, wherein the flexible thermally conductive member is a flexible multi-strand cable, where one or more strands is made from a thermally conductive material.

13. The heat transferring device of claim 11, wherein each of the plurality of flexible thermally conductive members is a flexible multi-strand cable, where one or more strands is made from a thermally conductive material.

14. The heat transferring device of any of claims 1, 2, 5 or 6, further comprising:

a first thermally conductive member being configured and arranged to thermally couple the first end of the flexible thermally conductive member to the heat producing device; and

a second thermally conductive member being configured and arranged to thermally couple the second end of the flexible thermally conductive member to the heat sink.

15. The heat transferring device of claim 9, further comprising:

a first thermally conductive member being configured and arranged to thermally couple the first end of each of the plurality of flexible thermally conductive members to the heat producing device; and

a second thermally conductive member being configured and arranged to thermally couple the second end of each of the plurality of flexible thermally conductive members to the heat sink.

16. The heat transferring device of claim 14, wherein the first thermally conductive member and the second thermally conductive member are arranged such that the flexible thermally conductive member extends therebetween in on of a generally radial direction or a generally axially direction.

17. The heat transferring device of claim 16, wherein at least a portion of the flexible thermally conductive member extending therebetween is arcuate.

18. The heat transferring device of claim 15, wherein the first thermally conductive member and the second thermally conductive member are arranged such that each of the plurality of flexible thermally conductive members extends there between in on of a generally radial direction or a generally axially direction.

19. The heat transferring device of claim 18, wherein at least a portion of each of the plurality of flexible thermally conductive members extending there between is arcuate.

20. The heat transferring device of claim 1, wherein the flexible thermally conductive member is comprised of a thermally material that is at least one of copper, aluminum, silver and carbon.

21. The heat transferring device of claim 14, wherein each of the first and second thermally conductive members comprises a thermally conductive material that is at least one of copper, aluminum, silver and carbon.

22. A heat transferring device for thermally communicating heat energy being produced by a heat producing device of one of an apparatus or system to a heat sink, where the heat energy being generated by the heat producing device is un-useable heat energy with respect to the apparatus or system, said heat transferring device comprising:

a first thermally conductive member that is thermally coupled to the heat producing device;

a second thermally conductive member that is thermally coupled to the heat sink;

a third thermally conductive member, a first end of which is thermally coupled to the first thermally conductive member and a second end of which is thermally coupled to the second thermally coupled conductive member;

wherein the third thermally conductive member is configured and arranged so that a majority of the heat energy being generated is communicated to the heat sink via the first, third and second conductive members respectively;

wherein the third thermally conductive member is configured and arranged so as to allow relative motion between the first and second thermally conductive members.

23. The heat transferring device of claim 22 wherein the third thermally conductive member is configured and arranged so that one of at least 50% or 80% of the heat energy being generated is communicated to the heat sink.

24. The heat transferring device of claim 22, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

25. The heat transferring device of claim 22, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

26. The heat transferring device of claim 22, further comprising a plurality of third thermally conductive members, where the first end of each of the plurality of third thermally conductive members is thermally coupled to the first thermally conductive member and where the second end of each of the plurality of third thermally conductive members is thermally coupled to the second thermally conductive member.

27. The heat transferring device of claim 22, wherein the first thermally conductive member and the second thermally conductive member are arranged such that the flexible thermally conductive member extends therebetween in one of a generally radial direction or a generally axially direction.

28. The heat transferring device of claim 26, wherein at least a portion of the flexible thermally conductive member extending therebetween is arcuate.

29. The heat transferring device of claim 25, wherein the third thermally conductive member is configured and arranged so as to have spring constants in each of the axial, radial, and angular directions that are equal to or less than a desired value for each of the axial, radial and angular directions.

30. The heat transferring device of claim 22, wherein said third thermally conductive member comprises a plurality or more of flexible thermally conductive elements, each conductive element extending between, and being thermally coupled to, the first and second thermally conductive members.

31. The heat transferring device of claim 22, wherein each conductive element is a flexible multi-strand cable, each strand be made from a thermally conductive material.

32. The heat transferring device of claim 22, wherein the heat energy being communicated is the un-useable heat energy generated by a bearing.

33. A heat transferring device for thermally communicating heat energy being produced by a heat producing device of one of an apparatus or system to a heat sink, where the heat energy being generated by the heat producing device is un-useable heat energy with respect to the apparatus or system, said heat transferring device comprising:

a first thermally conductive member that is thermally coupled to the heat producing device;

a second thermally conductive member that is thermally coupled to the heat sink;

a plurality or more of third thermally conductive members, a first end of each of the plurality of third thermally conductive members being thermally coupled to the first thermally conductive member and a second end of each of the plurality of third thermally conductive members being thermally coupled to the second thermally coupled conductive member;

wherein each of the plurality of third thermally conductive members is configured and arranged so that a majority of the heat energy being generated is communicated to the heat sink via the first thermally conductive members, the plurality of third thermally conductive members and the second conductive member respectively; and

wherein each of the plurality of third thermally conductive members is configured and arranged so as to yield a structure that allows relative motion between the first and second thermally conductive members.

34. The heat transferring device of claim 32 wherein each of the plurality of third thermally conductive members is configured and arranged so that one of at least 50% or 80% of the heat energy being generated is communicated to the second thermally conductive member via the plurality of third thermally conductive members.

35. The heat transferring device of claim 32, wherein the structure yielded allows relative motion in one of in one direction, in two directions or in three directions.

36. The heat transferring device of claim 32, wherein the structure yielded allows relative motion in at least one of a radial direction, an axial direction, or an angular direction.

37. The heat transferring device of claim36, wherein the structure yielded has spring constants in each of the axial, radial and angular directions that are equal to or less than a desired value for each of the axial, radial and angular directions.

38. An apparatus comprising:

a heat producing device that generates un-useable heat energy with respect to the apparatus;

a heat transferring device including a flexible thermally conductive member, a first end of which is thermally coupled to the heat producing device, and a second end of which is thermally coupled to a heat sink.

39. The apparatus of claim 38, wherein the flexible thermally conductive member is configured and arranged so that at least some of the heat energy being generated by the heat producing device is communicated to the heat sink.

40. The apparatus of claim 38, wherein the flexible thermally conductive member is configured and arranged so as to allow relative motion between the heat generating device and a portion of the heat sink.

41. The apparatus of claim 40, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

42. The apparatus of claim 40, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

43. A flywheel energy storage system comprising:

a heat producing device that generates un-useable heat energy with respect to the flywheel energy storage system;

a heat transferring device including a flexible thermally conductive member, a first end of which is thermally coupled to the heat producing device, and a second end of which is thermally coupled to a heat sink.

44. The flywheel energy storage system of claim 43, wherein the flexible thermally conductive member is configured and arranged so that at least some of the heat energy being generated by the heat producing device is communicated to the heat sink.

45. The flywheel energy storage system of claim 43, wherein the flexible thermally conductive member is configured and arranged so as to allow relative motion between the heat generating device and a portion of the heat sink.

46. The flywheel energy storage system of claim 45, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

47. The flywheel energy storage system of claim 45, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

48. A flywheel energy storage system comprising:

a flywheel;

a shaft to which is secured the flywheel;

at least one bearing assembly that rotatably supports the shaft;

a heat sink;

a heat conduction device for said at least one bearing assembly, the heat conduction device including a flexible thermally conductive member, a first end of which is thermally coupled to the at least one bearing assembly, and a second end of which is thermally coupled to a heat sink.

49. The flywheel energy storage system of claim 48, wherein the flexible thermally conductive member is configured and arranged so that at least some of the heat energy being generated by the at least one bearing assembly is communicated to the heat sink.

50. The flywheel energy storage system of claim 49, wherein the flexible thermally conductive member is configured and arranged so that a majority of the heat energy being generated is communicated to the heat sink.

51. The flywheel energy storage system of claim 49 wherein the flexible thermally conductive member is configured and arranged so that one of at least 50% or 80% of the heat energy being generated is communicated to the heat sink.

52. The flywheel energy storage system of claim 48, wherein the flexible thermally conductive member is configured and arranged so as to allow relative motion between the at least one bearing assembly and a portion of the heat sink.

53. The flywheel energy storage system of claim 52, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

54. The flywheel energy storage system of claim 52, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

55. The flywheel energy storage system of claim 54, wherein the flexible thermally conductive member is configured and arranged so as to have spring constants in each of the axial, radial and angular directions that are equal to or less than a desired value for each of the axial, radial and angular directions.

56. The flywheel energy storage system of claim 48, further comprising a plurality of flexible thermally conductive members, where the first end of each of the plurality of flexible thermally conductive members is thermally coupled to the at least one bearing assembly and where the second end of each of the plurality of flexible thermally conductive members is thermally coupled to the heat sink.

57. The flywheel energy storage system of claim 48, wherein the flexible thermally conductive member is comprised of a plurality or more of flexible elements.

58. The flywheel energy storage system of claim 48, wherein the flexible thermally conductive member is a flexible multi-strand cable, where one or more strands comprises a thermally conductive material.

59. The flywheel energy storage system of claim 48, further comprising:

a first thermally conductive member being configured and arranged to thermally couple the first end of the flexible thermally conductive member to the at least one bearing assembly; and

a second thermally conductive member being configured and arranged to thermally couple the second end of the flexible thermally conductive member to the heat sink.

60. The flywheel energy storage system of claim 59, wherein the first thermally conductive member and the second thermally conductive member are arranged such that the flexible thermally conductive member extends therebetween in on of a generally radial direction or a generally axially direction.

61. The flywheel energy storage system of claim 60, wherein at least a portion of the flexible thermally conductive member extending therebetween is arcuate.

62. The flywheel energy storage system of claim 48, wherein the flexible thermally conductive member comprises a thermally conductive material that is at least one of copper, aluminum, silver and carbon.

63. The flywheel energy storage system of claim 59, wherein each of the first and second thermally conductive members comprises a thermally conductive material that is at least one of copper, aluminum, silver and carbon.

64. The flywheel energy storage system of claim 48, further comprising:

a plurality of bearing assemblies that rotatably supports the shaft;

a plurality of heat conduction devices at least one for each of the plurality of bearing assemblies, where the first end of the flexible thermally conductive member of said at least one of the plurality of heat conduction devices is thermally coupled to a corresponding one of the plurality of bearing assemblies, and where the second end of the flexible thermally conductive member of said at least one of the plurality of heat conduction devices is thermally coupled to the corresponding one of the plurality of bearing assemblies.

65. The flywheel energy storage system of claim 48, further comprising a plurality of heat conduction devices for said at least one bearing assembly.

66. The flywheel energy storage system of claim 48, wherein the flexible, thermally conductive member is arcuate.

67. The flywheel energy storage system of claim 56, wherein each of the plurality of flexible, thermally conductive members is arcuate.

68. A flywheel energy storage system comprising:

a flywheel;

a shaft to which is secured the flywheel;

at least one bearing assembly that rotatably supports the shaft;

a heat sink;

a heat conduction device for said at least one bearing assembly, the heat conduction device including:

a first thermally conductive member that is thermally coupled to said at least one bearing assembly;

a second thermally conductive member that is thermally coupled to the heat sink;

a third thermally conductive member that is thermally coupled to the first and second thermally conductive members such that at least some of the heat energy being generated by said at least one bearing assembly is thermally conducted to the heat sink via the first, third and second conductive members respectively; and

wherein the third thermally conductive member is configured and arranged so as to allow relative motion between the first and second thermally conductive members.

69. The flywheel energy storage system of claim 68, further comprising a plurality of heat conduction devices for said at least one bearing assembly.

70. The flywheel energy storage system of claim 68, further comprising a plurality of bearing assemblies and a plurality of heat conduction devices, at least one heat conduction device for each of said plurality of bearing assemblies.

71. The flywheel energy storage system of claim 70, wherein there is a plurality of heat conduction devices for each of said plurality of bearing assemblies.

72. The flywheel energy storage system of claim 68, wherein the relative motion being allowed is in one of in one direction, in two directions or in three directions.

73. The flywheel energy storage system of claim 68, wherein the relative motion being allowed is in at least one of a radial direction, an axial direction, or an angular direction.

74. A flywheel energy storage system comprising:

a flywheel;

a shaft to which is secured the flywheel;

at least one bearing assembly that rotatably supports the shaft;

a heat sink;

a heat conduction device for said at least one bearing assembly, the heat conduction device including:

a first thermally conductive member that is thermally, conductively interconnected to said at least one bearing assembly;

a second thermally conductive member that is thermally, conductively interconnected to the heat sink;

a multiplicity of arcuate, flexible, thermally, conductive elements, each conductive element extending between, and being thermally interconnected to, the first and second thermally conductive members such that at least some of the heat energy being generated by the bearing assembly is thermally conducted to the heat sink via the first conductive member, the multiplicity of conductive elements and the second conductive member respectively;

wherein each conductive element is a flexible multi-strand cable, each strand be made from a thermally conductive material; and

wherein the multiplicity of conductive elements are configured and arranged so as to yield a structure that allows relative motion between the first and second thermally conductive members.

75. The flywheel energy storage system of claim 74, wherein the structure yielded allows relative motion in one of in one direction, in two directions or in three directions.

76. The flywheel energy storage system of claim 74, wherein the structure yielded allows relative motion in at least one of a radial direction, an axial direction, or an angular direction.

77. A method for dissipating un-useable heat energy being generated by a heat producing device comprising:

thermally interconnecting the heat producing device to a heat sink; and

wherein said step of thermally interconnecting includes:

providing a flexible thermally conductive member being configured and arranged so as to allow relative motion between the heat producing device and a portion of the heat sink,

first thermally coupling a first end of the flexible thermally conductive member to the heat producing device, and

second thermally coupling a second end of the flexible thermally conductive members to the heat sink.

78. The heat dissipating method of claim 77, wherein said providing includes providing a flexible thermally conductive member being configured and arranged so that at least some of the heat energy being generated by the heat producing device is communicated to the heat sink.

79. The heat dissipating method of claim 78, wherein said providing includes providing a flexible thermally conductive member being configured and arranged so that a majority of the heat energy being generated is communicated to the heat sink.

80. The heat dissipating method of claim 78, wherein said providing includes providing a flexible thermally conductive member being configured and arranged so

that one of at least 50% or 80% of the heat energy being generated is communicated to the heat sink.

81. The heat dissipating method of claim 77, wherein said providing includes providing a flexible thermally conductive member being configured and arranged so as to allow relative motion in one of in one direction, in two directions or in three directions.

82. The heat dissipating method of claim 77, wherein said providing includes providing a flexible thermally conductive member being configured and arranged to allow relative motion in at least one of a radial direction, an axial direction, or an angular direction.

83. The heat dissipating method of claim 82, wherein said providing includes providing a flexible thermally conductive member being configured and arranged such that it has spring constants in each of the axial, radial and angular directions that are equal to or less than a desired value for each of the axial, radial and angular directions.

84. The heat dissipating method of claim 77, wherein said step of thermally interconnecting further includes;

providing a plurality or more of flexible thermally conductive members,

first thermally coupling the first end of each of the plurality or more of flexible thermally conductive members to the heat producing device, and

second thermally coupling a second end of each of the plurality or more of flexible thermally conductive members to the heat sink.

85. The heat dissipating method of claim 84, wherein there is a plurality of heat generating devices bearings generating heat energy and wherein said first and second thermally coupling includes thermally coupling one of the plurality or more of flexible thermally conductive members to a corresponding one of the plurality of heat generating devices, whereby heat energy from said corresponding one of the plurality of heat generating devices is communicated to the heat sink.

86. The heat dissipating method of claim 85, wherein said step of first and second thermally coupling includes thermally coupling a plurality of the plurality or more of flexible thermally conductive members to said corresponding one of the plurality of heat generating devices, such that the at least some of the heat energy being generated by said corresponding one of the plurality of heat generating devices is thereby thermally communicated to the heat sink.

87. A method for dissipating heat energy being generated by a bearing comprising the step of thermally interconnecting the bearing to a heat sink, said step of thermally interconnecting including:

first thermally conductively interconnecting a first thermally conductive member to the bearing;

second thermally conductively interconnecting a second thermally conductive member to the heat sink;

third thermally conductively interconnecting a third thermally conductive member to the first and second thermally conductive members such that at least some of the heat energy being generated by the bearing is thermally conducted to the heat sink via the first, third and second conductive members respectively; and

configuring the third thermally conductive member so as to allow relative motion between the first and second thermally conductive members.

88. The heat dissipating method of claim 87, wherein said third thermally conductively interconnecting includes thermally interconnecting the third thermally conductive member to the first and second thermally conductive members such that a majority of the heat energy being generated is communicated to the heat sink.

89. The heat dissipating method of claim 87, wherein said third thermally conductively interconnecting includes thermally interconnecting the third thermally conductive member to the first and second thermally conductive members such that one of at least 50% or 80% of the heat energy being generated is communicated to the heat sink.

90. The heat dissipating method of claim 87, wherein said configuring includes configuring the third thermally conductive member so as to allow relative motion in one of in one direction, in two directions or in three directions.

91. The heat dissipating method of claim 87, wherein said configuring includes configuring the third thermally conductive member so as to allow relative motion in at least one of a radial direction, an axial direction, or an angular direction.

92. The heat dissipating method of claim91, wherein said configuring includes configuring the third thermally conductive member such that it has spring constants in each of the axial, radial and angular directions that are equal to or less than a desired value for each of the axial, radial and angular directions.

93. The heat dissipating method of claim 87, further comprising providing a plurality of first, second and third thermally conductive members and wherein said step of thermally interconnecting further includes:

thermally interconnecting each of said plurality of the first and second thermally conductive members respectively to the bearing and heat sink, and

thermally interconnecting each of the plurality of third thermally conductive members to each pair of corresponding first and second thermally conductive members.

94. The heat dissipating method of claim 87, wherein the third thermally conductive member comprises a multiplicity of flexible thermally conductive elements and wherein said step of thermally interconnecting further includes extending each conductive element between, and thermally interconnecting each conductive element to, the first and second thermally conductive members, whereby the at least some of the heat energy being generated by the bearing is thermally conducted to the heat

sink via the first conductive member, the multiplicity of conductive elements and the second conductive member respectively.

95. The heat dissipating method of claim 94, wherein each conductive element is a flexible multi-strand cable, each strand being made from a thermally conductive material.

96. The heat dissipating method of claim 95, wherein the thermally conductive material is at least one of copper, aluminum, silver and carbon.

97. The heat dissipating method of claim 96, wherein each of the first and second thermally conductive members comprises a thermally conductive material that is at least one of copper, aluminum, silver and carbon.

98. A method for dissipating heat energy being generated by a bearing comprising the step of thermally interconnecting at least one heat conduction device to the bearing and to a heat sink, such that at least some of the heat energy being generated by the bearing is thermally conducted to the heat sink via said at least one heat conduction device, each of said at least one heat conduction device includes:

a first thermally conductive member that is thermally, conductively interconnected to the bearing;

a second thermally conductive member that is thermally, conductively interconnected to the heat sink;

a third flexible, thermally conductive member that is thermally, conductively interconnected to the first and second thermally conductive members such that the at least some of the heat energy being generated by the bearing is thermally conducted to the heat sink via the first, third and second conductive members respectively; and

wherein the third flexible, thermally conductive member is configured and arranged so as to allow relative axial and radial motion between the first and second thermally conductive members.

99. The heat dissipating method of claim 98, wherein said third flexible thermally conductive member comprises a multiplicity of flexible thermally conductive elements, each conductive element extending between, and being thermally interconnected to, the first and second thermally conductive members.

100. The heat dissipating method of claim 99, wherein each conductive element is a flexible multi-strand cable, each strand being made from a thermally conductive material.

101. The heat dissipating method of claim 98, wherein said step of thermally interconnecting includes thermally interconnecting a plurality of heat conduction devices to the bearing and to the heat sink, such that the at least some of the heat energy being generated by the bearing is thermally conducted to the heat sink via said plurality of heat conduction devices.

102. The heat dissipating method of claim 98, wherein there is a plurality of bearings generating heat energy and wherein said step of thermally interconnecting includes thermally interconnecting said at least one heat conduction device to each of the plurality of bearings and the heat sink, such that the at least some of the heat energy being generated by each of the plurality of bearings is thermally conducted to the heat sink via said at least one heat conduction device.

103. The heat dissipating method of claim 102, wherein said step of thermally interconnecting includes thermally interconnecting a plurality of heat conduction devices to each of said plurality of bearing and to the heat sink, such that the at least some of the heat energy being generated by each of said plurality of bearings is thermally conducted to the heat sink via said plurality of heat conduction devices.

104. The heat dissipating method of claim 98, wherein the third flexible, thermally conductive member is configured and arranged so as to further allow relative angular motion between the first and second thermally conductive members.